Gyakorló feladatok megoldásai - 7.
MA6213d

1. (a) 0.928

   (b) 0.78028

   (c) 2.77249

   (d) -1.82473

2. (a) $x_n = c5^n$, instabil,

   (b) $x_n = 3(-2)^n$, instabil,

   (c) $x_n = c_1(-3)^n + c_2 2^n$, instabil,

   (d) $x_n = \frac{3}{2} + \frac{3}{2}(-1)^n$, stabil,

   (e) $x_n = c_1 2^n \cos \frac{n\pi}{2} + c_2 2^n \sin \frac{n\pi}{2}$, instabil,

   (f) $x_n = 2 \left(\frac{\sqrt{2}}{2} \right)^n \cos \frac{3n\pi}{4} + 2 \left(\frac{\sqrt{2}}{2} \right)^n \sin \frac{3n\pi}{4}$, aszimptotikusan stabil,

   (g) $x_n = c_1 \left(-\frac{1}{2} \right)^n + c_2 n \left(-\frac{1}{2} \right)^n$, aszimptotikusan stabil,

   (h) $x_n = (2 - 2n)3^n$, instabil.

3. (a) $u(x,t) = 3e^{-8t} \sin 2x + 6e^{-50t} \sin 5x$,

   (b) $u(x,t) = 2e^{-27t} \sin 3x - 5e^{-147t} \sin 7x$,

   (c) $u(x,t) = 5 \cos 6t \sin 3x - 3 \cos 10t \sin 5x$,

   (d) $u(x,t) = 2 \cos 3t \sin x - 6 \cos 24t \sin 8x - \cos 27t \sin 9x$.